

CLAIMS

1. A process for producing refined rubbery polymer particles
(A) comprising: bringing water (D) into contact with a mixture
(C) obtained by mixing an aqueous latex of the rubbery polymer
5 particles (A) with an organic solvent (B) exhibiting partial
solubility to water; thereby forming a flocculate (F) of the
rubbery polymer particles (A) containing the organic solvent
(B) in an aqueous phase (E); and then separating the flocculate
(F).

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2. The process according to claim 1, wherein water (D) is
continuously mixed and brought into contact with the mixture
(C).

15 3. The process according to claim 2, wherein the mixture (C)
and the water (D) are supplied from the bottom of a mixing device
and the mixture of the flocculate (F) and the aqueous phase (E)
is recovered from an upper part of the mixing device.

20 4. A process for producing refined rubbery polymer particles
(A), comprising: removing water and/or removing solvent from
the flocculate (F) of the refined rubbery polymer particles (A)
obtained by the process according to any one of claims 1 to 3,
followed by drying.

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5. A process for producing a dispersion (G), comprising:
adding an organic solvent exhibiting an affinity with the rubbery
polymer particles (A) to the flocculate (F) of refined rubbery
polymer particles (A) obtained by the production process
5 according to any one of claims 1 to 3, thereby obtaining the
dispersion (G) in which the rubbery polymer particles (A) are
dispersed in the organic solvent.

6. A process for producing a resin composition comprising
10 rubbery polymer particles (A) dispersed in a polymerizable
organic compound (H) having a reactive functional group,
comprising: mixing the dispersion (G) obtained by the production
process according to claim 5 and the polymerizable organic
compound (H) and then removing the volatile ingredient by
15 evaporation.

7. A process for producing a resin composition comprising
rubbery polymer particles (A) dispersed in a polymerizable
organic compound (H) having a reactive functional group,
20 comprising: mixing the flocculate (F) obtained by the process
according to any one of claims 1 to 3 and the polymerizable organic
compound (H) and then removing the volatile ingredient by
evaporation.

25 8. The process for a resin composition according to claim

6 or 7, wherein the polymerizable organic compound (H) having
the reactive functional group is an epoxy resin.

9. The process according to any one of claims 1 to 8, wherein
5 the solubility to water at 20°C of the organic solvent (B)
exhibiting a partial solubility to water is 5% by weight or more
and 40% by weight or less.

10. The process according to any one of claims 1 to 9, wherein
10 the amount of water (D) to be brought into contact with the mixture
(C) obtained by mixing the aqueous latex of the rubbery polymer
particles (A) with the organic solvent (B) exhibiting the partial
solubility to water is 40 parts by weight or more and 350 parts
by weight or less based on 100 parts by weight of the organic
15 solvent (B).

11. The process according to any one of claims 1 to 10, wherein
the ratio of the organic solvent (B) exhibiting the partial
solubility to water contained in the flocculate (F) is 30% by
20 weight or more based on the entire weight of the flocculate (F).

12. The process according to any one of claims 1 to 11, wherein
the rubbery polymer particles (A) comprise a polymer having a
two or more multi-layered structure and contain at least one
25 layer of cross-linked rubbery polymer layer.

13. The process according to any one of claims 1 to 12, wherein
the rubbery polymer particles (A) comprise a graft copolymer
having 5 to 60% by weight of a shell layer (A-2) obtained by
5 polymerizing at least one vinyl polymerizable monomer selected
from (meth)acrylate ester, aromatic vinyl, vinyl cyanate,
unsaturated acid derivative, (meth)acrylamide derivative and
maleimide derivative in the presence of 40 to 95% by weight of
a rubber particle core (A-1) comprising an elastmeric material
10 constituted with 50 to 100% by weight of at least one monomer
selected from diene monomer and (meth)acrylate ester monomer,
and 0 to 50% by weight of other copolymerizable vinyl monomer,
a polysiloxane elastmeric material or a mixture thereof.

15 14. The process according to claim 13, wherein the shell layer
(A-2) of the rubbery polymer particles (A) has at least one
reactive functional group selected from the group consisting
of epoxy group, carboxylic group, hydroxylic group and
carbon-to-carbon double bond.

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15. A flocculate (F) comprising rubbery polymer particles (A),
organic solvent (B), and water (D) obtained by the process
according to any one of claims 1 to 3.

25 16. Polymer particles obtained by the process according to

any one of claims 1 to 4.

17. A dispersion (G) comprising rubbery polymer particles (A), organic solvent exhibiting an affinity with the rubbery 5 polymer particles (A) and water (D), obtained by the production process according to claim 5.

18. A resin composition obtained by the process according to any one of claims 6 to 14.

10 19. A cured product formed by curing the epoxy resin composition obtained by the process of any one of claims 8 to 14.